

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure: Program Procedure	NUMBER IH96120
	REVISION Final rev1
Subject: Noise and Hearing Conservation Program SHSD Industrial Hygiene Group Role	REV. DATE 04/07/04
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**Noise and Hearing
Conservation Program**

1.0 Purpose & Scope

Purpose: The purpose of this procedure is to define specific roles, responsibilities, authorities, and accountabilities of the SHSD IH group and its interaction with other BNL organizations in the development, implementation and coordination of an effective Noise and Hearing Conservation (NHC) program.

This document describes program elements necessary for compliance with OSHA and DOE regulations.

Scope: This procedure defines the entire range of the role of the IH Group in delivery of NHC services. The description is at a very brief description of the service. Details of each of these elements is defined in detail in corresponding IH Group procedures in the series IH96nnn.

Attachment 9.2 of this SOP serves as the main record of practitioner for all IH Group NHC procedures.

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2.0 Responsibilities

- 2.1 The BNL Noise and Hearing Conservation program is implemented through a matrixed organization of several BNL organization units. The SHSD portion of the program is implemented through the Industrial Hygiene Group Leader or designee who serves as the *SHSD Noise and Hearing Conservation Program Administrator*.
- 2.2 The SHSD person assigned as the *SHSD Noise and Hearing Conservation Program Administrator* also serves at the *BNL NHC Administrator* and the *Subject Matter Expert* and holds general responsibility to monitor the effectiveness of the BNL NHC Program and lead the correction of deficiencies.

3.0 Definitions

Noise and Hearing Conservation Program Administrator: A person, designated by the Industrial Hygiene Group Leader, to oversee compliance with the DOE Orders and OSHA regulations on noise and hearing conservation program for SHSD and BNL as a whole.

4.0 Prerequisites

none

5.0 Precautions

none

6.0 Procedure (Program Elements)

- 6.1 The IH Group serves in the following roles:

Primary Role(s)
Serve as NHC Program Administration & SBMS Subject Matter Expert
Conduct periodic Regulatory Driver tracking
Perform periodic BNL Program Self Assessment
Prepare Standard Operating Procedures for Hazard Assessment & Exposure Monitoring
Conduct advanced (complex) noise surveys

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Investigate Standard Threshold Shift (STS) hearing loss cases reported by OMC
Calibrate and Maintain Exposure Monitoring Equipment
Maintain an Exposure Monitoring Record database
Maintain an IH Noise Job tracking system
Reviews or assists in developing training material
Perform Project Design Reviews for Noise impact on workers

- 6.2 **Program Administration:** The IH Group Leader's shall designate a SHSD NHC Program Administrator. This role will be filled by professional Industrial Hygienist with the IH Group who has sufficient knowledge of noise hazards, BNL operations, and OSHA and DOE drivers on NHC. This individual will also serves as the BNL NHC Administrator and BNL Subject Matter Expert for NHC.
- 6.3 **Regulatory Driver Tracking:** The NHC Administrator shall maintain mechanisms to track the status of DOE, OSHA, ANSI, NIOSH and ACGIH regulations and guidance to assess their impact on the BNL Program and shall initiate corrective action for any gaps in the BNL program resulting from changes in the reference and regulatory documents. Review of checks on the status of regulatory drivers will be formally documented.
- 6.4 **Periodic BNL Program Self-Assessment:** The NHC Administrator shall periodically review the BNL NHC Program to access compliance with regulatory drivers and determine the overall effectiveness of the program. The periodic evaluation shall occur at least each 3 years and shall ensure that all program aspects are conducted to meet the requirements in the OSHA and DOE drivers. Attachment 9.1, or an equivalent, is used to document the assessment. Records of the assessment will be maintained for a minimum of 75 years in the SHSD IH Laboratory record system and the BNL/ESHQ Document Logging system.
- 6.5 **Preparation of Procedures for Hazard Assessment and Exposure Monitoring:** The IH Group develops and revises Standard Operating Procedures and Recordkeeping forms for noise hazard assessments and exposure monitoring. These procedures are maintained on the SHSD IHG Internet website for access by all organizations performing tasks covered by the documents. The IH Group has prepared procedures describing general noise exposure assessment principles, specific instrument operation instruction, and calibration protocols and techniques.

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- 6.6 **Conduct advanced (complex) noise surveys:** The IH Group maintains the expertise to conduct advanced complexity noise surveys and octave band analysis following the IH96 series Standard Operating Procedures. IH Group evaluations are made to analysis of potential employee and community noise exposure from BNL operations and obtain the data necessary for development of effective administrative and engineering controls.
- 6.7 **Investigate Standard Threshold Shift (STS) hearing loss cases reported by OMC:** The IH Group conducts formal evaluations of workplace conditions to determine if occupational sources are contributory to STS hearing losses discovered by OMC audiometric testing. A formal report is prepared and provided to OMC, the Workers Compensation Administrator, line management, and the worker. investigation is to follow the procedure in IH96175.
- 6.8 **Calibration and Maintenance of Exposure Monitoring Equipment:** The IH Group develops and revises Standard Operating Procedure for Noise meters and dosimeters and maintains the equipment in a state of readiness for use by qualified surveyors from BSA organizations that perform exposure assessments. Calibration of Portable test equipment used in this program will be calibrated on a basis established in IH51600.
- 6.9 **Maintenance of Exposure Monitoring Database:** The IH Group has developed and maintains a electronic database that compiles information from written field survey forms and meter logged data printout and other appropriate written records. All organizations at BNL that conduct area surveys and personal dosimetry are to provide the SHSD IHG with the originals of each written record for storage in this system.
- 6.10 **IH Exposure monitoring request tracking system:** The IH Group has developed and maintains an *IH Services Job Tracking System* electronic database that identifies and tracks all Noise and Hearing Conservation activities being conducted at BNL by BSA organizations. All organizations at BNL conducting work for the BSA prime contract are to provide the SHSD IHG with the notification of the request/need for the assessment or monitoring and be assigned an IH Services Job Number. (Activities of Sub-contractors monitoring their own non-BSA/Non-BNL employees are not tracked in this system.)

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- 6.11 **Project Design Review for noise impact on workers:** The IH Group participates in Project Design Reviews as requested by the SHSD Safety Engineering Group. The person performing the review will follow IH60700. The IH group shall review major construction and renovation projects and include an analysis of potential noise exposure from the construction of and intended use of the project. Recommendations shall be made to correct noise source before construction activities are commenced.

7.0 Implementation & training

- 7.1 The IHG qualifies SHSD personal who perform fieldwork (hazard assessment and exposure monitoring) under this program by following documented procedures IH96200 to IH96999.

8.0 References

- 8.1 BNL SHSD Procedures: *IH962000, IH96250, IH 963000, IH96400, IH96401, IH96500, IH96600, and IH51600.*
- 8.2 BNL SBMS Subject Area *Noise and Hearing Conservation*
- 8.3 *29CFR1910.95 OSHA Occupational Noise Exposure Standard*
- 8.4 *DOE Order 440.1A*
- 8.5 *ANSI S1.13-1971 Methods for the Measurement of Sound Pressure Levels*

9.0 Attachments

- 9.1 **Annual Compliance Audit Checklist form**
- 9.2 **IH Group Noise and Hearing Conservation Practitioner Qualification Form**

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Document Review Tracking Sheet		
Prepared By: <i>(signature/date on file)</i> R. Selvey 3/22/01 Certified Industrial Hygienist	Reviewed By / Date: <i>(signature/date on file)</i> N. Bernholz 4/11/01 Certified Industrial Hygienist	Approved By / Date: <i>(signature/date on file)</i> R. Selvey 04/25/01 Industrial Hygienist Group Leader
Filing Code: IH52QR.01	QA Review / Date:	Effective Date: 04/25/01

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The only official copy is on-line at the SHSD IH Group website.
Before using a printed copy, verify that it is current by checking the document issue date on the website.

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Attachment 9.1

BNL Noise Self-Assessment Compliance Checklist

YEAR_____

Item	Criteria	Yes/No ⁽¹⁾
1	Have the <i>ANSI, OSHA, and ACGIH</i> standards or DOE Orders regarding Noise and Hearing Conservation been updated during this audit period ?	
1b	If item 1 is yes, has IH SOP been updated to reflect the changes ?	
2	Are personnel qualification records up-to-date and the documentation properly maintained?	
3	Was test equipment calibrated within the specified times and records appropriately maintained ?	
4	Are records of testing, conducted during the period, appropriately filled out and properly maintained for future access (including the last three years records properly stored) ?	
5	Where results of testing appropriately conveyed to the requester of the test in a timely manner (within 30 days) and to employees within regulatory set time limits?	
6	Observation of an survey: Was the test conducted in accordance with all steps and requirements in IHSOP 96 series ? Date of observation: _____ Observed By: _____ Location of test: _____	

	Name	Date
Reviewed Performed By:		
Review Approved By:		

(1) Attach any supporting documentation for the status to this record.

Recordkeeping: This record is to be kept until 75 years from the Review Approval Date.

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Attachment 9.2

BNL IH Group Noise & Hearing Conservation

Hazard Assessment Practitioner Qualification Record

(see next page)

Noise and Hearing Conservation IH Group Member NHC Hazard Assessor



Job Performance Measure (JPM) Completion Certificate

Candidate's Name	Life Number:	Qualification Number: HP-IHP- 96120
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Practical Skill Evaluation: Demonstration of Evaluation Methodology by Oral Exam

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Hazard Analysis	Understands the need to perform a hazard analysis of the area and potential exposure to the self as sampler and workers in the area.			
2. Personal Protective Equipment	Understands the need to be aware of the potential surface contamination, airborne levels of contaminants, radiological hazards, and noise hazard. Knows how to determine the need for PPE.			
3. Sampling Equipment	Knows where equipment needed for the procedure is located and how to properly sign it out.			
4. Pre-Testing Inspection	Verifies the system to be monitored is operational and represents typical operation. Makes notation in sampling record if the operating conditions are atypical.			
5. Measurement of hazard	Knows how to properly measure employee exposure to hazardous noise levels.			
6. Operating Parameters	Knows the theory to establish operating parameters (safety envelope) for the equipment. Make drawing or photo. Measure.			
7. Documentation	Demonstrates correctly filling out IH monitoring forms.			

IH 96175 STS Evaluation Practical Skill Evaluation: Demonstration of Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Determining the need for investigation	Demonstrates knowledge in reading an STS notification and can determine the appropriate assessment parameters.			
2. Conducts appropriate interviews	Demonstrates knowledge in stepping up and conducting interviews with supervision, the worker and co-workers to determine exposure characteristics.			
3. Conducts hazard assessment	Demonstrates knowledge in stepping up and conducting appropriate area surveys and dosimetry to determine exposure potential in the work operations.			
4. Documentation	Demonstrates correctly filling out IH forms, transfers appropriate info to IH databases, and prepares an evaluation assessment report.			

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IH 96200 Area Surveys Practical Skill Evaluation: Demonstration of Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Determining the need for investigation	Demonstrates knowledge in responding to RCD or line management or other indicators of the need to perform a hazard assessment. parameters.			
2. Conducts appropriate interviews	Demonstrates knowledge in stepping up and conducting monitoring with input from supervision and workers to determine exposure characteristics.			
3. Conducts hazard assessment	Demonstrates knowledge in stepping up and conducting appropriate area surveys to determine exposure potential in the work operations.			
4. Documentation	Demonstrates correctly filling out IH forms, transfers appropriate info to IH databases, prepares an evaluation assessment report (including an evaluation of the relationship of the exposure to occupational exposure limits), and notify workers and management of the results.			

IH 96250 Dosimetry Practical Skill Evaluation: Demonstration of Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Determining the need for investigation	Demonstrates knowledge in responding to RCD or line management or other indicators of the need to perform a hazard assessment. parameters.			
2. Conducts appropriate interviews	Demonstrates knowledge in stepping up and conducting monitoring with input from supervision and workers to determine exposure characteristics.			
3. Conducts hazard assessment	Demonstrates knowledge in stepping up and conducting appropriate area surveys to determine exposure potential in the work operations.			
4. Documentation	Demonstrates correctly filling out IH forms, transfers appropriate info to IH databases, prepares an evaluation assessment report (including an evaluation of the relationship of the exposure to occupational exposure limits), and notify workers and management of the results.			
1. Determining the need for investigation	Demonstrates knowledge in responding to RCD or line management or other indicators of the need to perform a hazard assessment. parameters.			

IH Noise Meter Operation Practical Skill Evaluation: Demonstration of Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
96300 GenRad 1565 SPL	Demonstrates how to correctly operate the meter.			
9640 GenRad 1982 SPL	Demonstrates how to correctly operate the meter.			
96401 GenRad 1982 OBA	Demonstrates how to correctly operate the meter.			
96500 B&K 2236 SPL	Demonstrates how to correctly operate the meter.			
96650 Quest Q-300	Demonstrates how to correctly operate the meter.			

I accept the responsibility for performing this task as demonstrated within this JPM and the corresponding SOP.

Candidate Signature:	Date:
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I certify the candidate has satisfactorily performed each of the above listed steps and is capable of performing the task unsupervised.

Evaluator Signature:	Date:
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